

FILE NO.: 204126-9002

REMARKS

Claims 1-20 were previously pending in the application. By the Amendment, Claims 1 and 20 are currently amended and Claims 2-19 remain unchanged.

Claim 20 is objected to under 37 C.F.R. 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants have amended claim 20 and as a result, respectfully request withdrawal of this rejection.

Claims 1-5 and 7-11 were rejected under 35 USC § 103(a) as being unpatentable over Bourdeau et al. (U.S. Patent No. 4,470,810) in view of Albelda et al. (U.S. Patent No. 5,496,172). Claims 6 and 7 are rejected under 35 USC § 103(a) as being unpatentable over Bourdeau et al. (U.S. Patent No. 4,470,810) in view of Albelda et al. (U.S. Patent No. 5,496,172), and further in view of Khademazad et al. (U.S. Patent No. 5,803,730).

The present invention relates to a tooth mobility measuring apparatus which measures the tooth mobility of a tooth based on a displacement state of the tooth which is moved by an impact force. A feature of the present invention is an impact mechanism which applies an impact force on a tooth. Specifically, the present invention adopts "an impact mechanism which *applies directly an impact force on a tooth by injection of the fluid or suction of air.*" As a result of the impact mechanism, a tooth would not come into contact with a piston or a pin, but rather an impact force would be directly applied on the tooth by injection of fluid or suction of air. By using the injection of a fluid, a tooth may be move without directly touching it, and the impact force to be applied to the tooth may have a more accurate value. In addition, the tooth mobility may be measured without bringing a sensor into contact with the tooth. Since the apparatus need not be brought into direct contact with the tooth, it can be easily disinfected, unlike a conventional apparatus which may require sterilization. Additionally, in the present invention, the pressure of the pressurized fluid to be injected or the pressure of suction may be adjusted by a controller 37. When a tooth with high tooth mobility is to be inspected, the pressure may be reduced. Hence, the measurement may be executed while

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easing the pain on the patient. In addition, the temperature of the pressurized fluid may also be adjusted, allowing a measurement to be executed while easing the pain or discomfort of the patient. (See Specification, page 22, line 16, to page 23, line 9)

Amended Claim 1 recites a tooth mobility measuring apparatus comprising an impact mechanism which has at least one of an injection mechanism having an injection port which injects a fluid and a suction mechanism having a vacuum port which sucks air, and applies *directly* an impact force on a tooth by injection *of the fluid* or suction *of air*, the impact mechanism comprising a control mechanism which sets a pressure by injection or suction to a predetermined value, at least one sensor, and a tooth mobility calculation mechanism.

None of the prior art teaches an impact mechanism which applies *directly* an impact force on a tooth by injection *of the fluid* or suction *of air*. For example, Bourdeau et al. applies an impact force on a tooth by transmitting such impact force of a piston 13 shown in Fig. 2 to the inspected tooth and not *directly* by injection *of fluid* or suction *of air*. Moreover, Albelda et al. teaches a "pneumatic remover" and not a mobility measuring apparatus. Khademazad et al. uses a *force transmitting member* 66, which does not act *directly* on a tooth by injection *of the fluid* or suction *of air*.

For these and other reasons, the cited art does not disclose the subject matter defined by independent Claim 1. Therefore, Claim 1 is allowable and all claims which depend from Claim 1 are allowable for the same reasons and also because they recite additional patentable subject matter.

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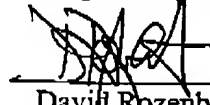
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CONCLUSION

In view of the above, entry of the present Amendment and allowance of Claims 1-20 are respectfully requested. If the Examiner has any questions regarding this amendment, the Examiner is requested to contact the undersigned. If an extension of time for this paper is required, petition for extension is herewith made.

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Respectfully submitted,



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